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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09-763,573	02/26/2001	Shinichi Suzuki	KIX0136-PCT	7885

7590

08-28-2002

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EXAMINER

ANDUJAR, LEONARDO

ART UNIT

PAPER NUMBER

2826

DATE MAILED: 08/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/763,573

Applicant(s)

SUZUKI ET AL.

Examiner

Leonardo Andujar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 18 June 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1,5-8,10-12,17-18 is/are pending in the application.
- 4a) Of the above claim(s) 17 and 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1,5-8 and 10-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I (claims 1, 5-8 and 10-12) in Paper No. 7 is acknowledged.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on perpendicular 08/31/1998.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 and 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Uemura (US 5,495,125).
6. Regarding claim 1, Uemura (e.g. figs. 1a –2c) shows a semiconductor device including:
 - A semiconductor chip 3;

- A protective package for covering the semiconductor chip, including a pair of opposed side surfaces, each of the side surfaces has a first flat slanted portion and a second flat slanted portion converging at a predetermined angle;
- A first lead 2 conducting to the semiconductor chip, including an inner portion covered by the protective package and a plurality of outer portions extending out of the protective package (see the top lead 2 in fig. 1a);
- A second lead conducting to the semiconductor chip, including an inner portion covered by the protective package and a plurality of outer portions extending out of the protective package (see the bottom lead 2 in fig. 1a);

7. The inner portions and the outer portions of the first and the second leads are flat and are located in the same plane. Also, the outer portions of the first and second leads are extended from both side surfaces.

8. Regarding claim 5, Uemura shows that the outer portions of the first and the second leads are extended out of the protective package from places where the first slanted portions and the second slanted portions meet each other.

9. Regarding claim 6, Uemura shows that the first slanted portion and the second slanted portion meet each other at a thickness-wise center of the protective package (fig. 2c).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uemura (US 5,495,125).

12. Regarding claims 7 and 8, Uemura shows most aspects of the instant invention (see comments above). Uemura does not disclose that the semiconductor chip is a light emitting element or a light-receiving element. However, this limitation is considered as intended use. Intended use and other types of functional language must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963).

13. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uemura (US 5,495,125) in view of Sugano et al. (US 5,198,888).

14. Regarding claim 10 Uemura shows most aspects of the instant invention (see paragraphs 6-7). However, Uemura does not explicitly disclose a substrate including:

- A main surface formed with a predetermined wiring pattern;
- A plurality of connection pads formed in the main surface;
- And a trough hole corresponding to a shape of the protective package;

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15. Therefore, Uemura does not disclose that the protective package is fitted into the through hole and the outer portions of the first and second leads connected to the pads.

Sugano (e.g. figs. 4-7) shows a circuit substrate including:

- A predetermined wiring pattern (10a, 12a) formed in the main surface;
- A plurality of connection pads 10a formed in the main surface;
- And a trough hole corresponding to a shape of a protective package 8a;

16. Also, the protective package is fitted into the through hole and the outer portions of the leads 3a are connected with the connecting pads. Sugano discloses that this type of embodiment provides an increased mounting density (col. 2/lls. 1-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a circuit substrate having a predetermined wiring pattern, connections pads and a through hole corresponding to the shape of the protective package disclosed by Uemura in order to provide an increased mounting density as suggested by Sugano.

17. Regarding claim 11, Sugano shows that the connections pads are disposed around the through hole.

18. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uemura (US 5,495,125) in view of Sugano et al. (US 5,198,888) in view of Toshiba (JP 01-120875)

19. Regarding claim 12, Uemura in view of Sugano shows most aspects of the instant invention. Uemura in view of Sugano does not explicitly disclose that the main surface of the substrate and the mounted the device can be laminated with a coating member. Toshiba discloses the idea of coating the main face with a resin that has a

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screening effect. It would have been obvious to one of ordinary skill in the art at the time the invention was made to laminate the main substrate surface and the mounted device to make the surfaces of the device disclosed by Uemura in view of Sugano having a screening effect.

20. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uemura (US 5,495,125) in view of Sugano et al. (US 5,198,888) in view of Matsushita (JP 48-93284)

21. Regarding claim 12, Uemura in view of Sugano shows most aspects of the instant invention. Uemura in view of Sugano does not explicitly disclose that the main surface of the substrate and the mounted the device can be laminated with a coating member. Matsushita discloses the idea of coating for the purpose of passivation. It would have been obvious to one of ordinary skill in the art at the time the invention was made to laminate the main surface and the mounted device disclosed by Uemura in view of Sugano in order to passivate the surfaces as suggested by Matsushita.

Conclusion

22. Papers related to this application may be submitted directly to Art Unit 2826 by facsimile transmission. Papers should be faxed to Art Unit 2826 via the Art Unit 2826 Fax Center located in Crystal Plaza 4, room 3C23. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2826 Fax Center number is **(703) 308-7722** or **-7724**. The Art Unit 2826 Fax Center is to be used only for papers related to Art Unit 2826 applications.

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23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Leonardo Andújar** at **(703) 308-0080** and between the hours of 9:00 AM to 6:00 PM (Eastern Standard Time) Monday through Friday (with alternated Fridays off) or by e-mail via Leonardo.Andujar@uspto.gov. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn, can be reached on (703) 308-6601.

24. Any inquiry of a general nature or relating to the status of this application should be directed to the **Group 2800 Receptionist** at **(703) 305-3900**.

25. The following list is the Examiner's field of search for the present Office Action:

Field of Search:	Date:
U.S. Class / Subclass (es): 257/099, 666, 691 and 777	08/02
Other Documentation:	
Electronic Database(s): East (USPAT, US PG PUB, JPO, EPO, Derwent, IBM TDB)	08/02

Leonardo Andújar

Patent Examiner Art Unit 2826

LA
8/14/02
LEONARDO ANDUJAR
PATENT EXAMINER

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